

In the claims

1. (currently amended) A recombinant host having stably incorporated into the genome a gene encoding a heterologous ~~enzyme selected from the group consisting of a polyhydroxyalkanoate synthase and a 4-hydroxybutyrate-CoA transferase,~~ wherein the host is selected from the group consisting of a plant, plant cell, and plant component.

2. (original) The host of claim 1 having stably incorporated into its genome both a polyhydroxyalkanoate synthase and a 4HB-CoA transferase.

Claims 3-4 (canceled)

5. (currently amended) The host of claim 1 further comprising genes expressing enzymes selected from the group consisting of β -ketothiolase, ~~and acetoacetyl CoA~~ reductase, PHA synthases, α -ketoglutarate transaminase, glutamate-succinic semialdehyde transaminase, glutamate dehydrogenase, glutamate decarboxylase, and 4-hydroxybutyrate dehydrogenase.

6. (currently amended) A method for enhancing production of polymers containing 4-hydroxybutyrate ~~4HB~~ in a host comprising

stably incorporating into the genome of the host a gene encoding a ~~heterologous enzyme selected from the group consisting of a polyhydroxyalkanoate synthase and a 4HB-CoA transferase,~~ wherein the host is selected from the group consisting of a plant, plant cell, and plant component.

7. (original) The method of claim 6 wherein the host has stably incorporated into its genome both a polyhydroxyalkanoate synthase and a 4HB-CoA transferase.

8. (original) The method of claim 6 further comprising enhancing expression of the heterologous enzyme.
9. (currently amended) The method of claim 8 wherein expression is enhanced by mutating the host followed by providing 4-hydroxybutyrate 4HB as a substrate and screening for increased polymer production by the mutated host.
10. (original) The method of claim 6 further comprising providing a host expressing enzymes selected from the group consisting of α -ketoglutarate transaminase, glutamate-succinic semialdehyde transaminase, glutamate dehydrogenase, glutamate decarboxylase, 4-hydroxybutyrate dehydrogenase and 4-hydroxybutyryl CoA transferase.
11. (original) The method of claim 6 further comprising providing a host expressing enzymes degrading arginine, glutamine or proline to produce gamma amino butyric acid.
12. (currently amended) A 4HB polymer produced by a recombinant host having stably incorporated into the genome a gene encoding a heterologous enzyme selected from the group consisting of a polyhydroxyalkanoate synthase and a 4HB-CoA transferase, wherein the host is selected from the group consisting of a plant, plant cell, and plant component.
13. (currently amended) A vector comprising an isolated gene encoding a 4HB-CoA transferase under the control of a promoter for enhancing expression of the gene encoding the 4HB-CoA transferase after integration of the promoter and gene encoding the 4HB-CoA transferase into the genome of a heterologous host, wherein the host is selected from the group consisting of a plant, plant cell, and plant component.

14. (new) The plant, plant cell, or plant component according to claim 1 wherein the plant cell and plant component are obtained from said plant, and wherein the plant is selected from the group consisting of brassica, sunflower, soybean, corn, safflower, flax, palm, coconut, potato, tapioca and cassava.

15. (new) The plant, plant cell, or plant component according to claim 6 wherein the plant cell and plant component are obtained from said plant, and wherein the plant is selected from the group consisting of brassica, sunflower, soybean, corn, safflower, flax, palm, coconut, potato, tapioca and cassava.

16. (new) The plant, plant cell, or plant component according to claim 12 wherein the plant cell and plant component are obtained from said plant, and wherein the plant is selected from the group consisting of brassica, sunflower, soybean, corn, safflower, flax, palm, coconut, potato, tapioca and cassava.

17. (new) The plant, plant cell, or plant component according to claim 13 wherein the plant cell and plant component are obtained from said plant, and wherein the plant is selected from the group consisting of brassica, sunflower, soybean, corn, safflower, flax, palm, coconut, potato, tapioca and cassava.